

LISTING OF THE CLAIMS

1-12. (Cancelled)

13. (Previously Presented) An activated carbon foam comprising a surface area ranging from about 10 m²/g to about 25 m²/g manufactured by the process comprising:

heating swellable particulate coal having a free swell index ranging from about 3.5 to about 5.0 in a mold at a heat-up rate of about 2°C/minute up to a temperature of about 600°C under a non-oxidizing atmosphere at a pressure ranging from about 25 psi to about 500 psi and soaking at said temperature for a time period ranging from about 2 hours to about 6 hours to produce a carbon foam;

activating said carbon foam by placing said carbon foam into a heated container and flowing an activation agent into said heated container at a rate in the range of about 1 ft³/minute to about 10 ft³/minute for a time period ranging from about 1 hour to about 12 hours at a temperature ranging from about 600°C to about 1200°C; and

cooling said heated swellable particulate to a temperature below about 100°C to form a carbon foam having a first overall surface area.

14. (New) The activated carbon foam of claim 13, wherein the activating agent comprises ozone.

15. (New) The activated carbon foam of claim 13, wherein the activating agent comprises carbon dioxide.

16. (New) The activated carbon foam of claim 13, wherein the process further comprises the step of carbonizing the carbon foam to form a carbonized foam by heating to a temperature ranging from about 600°C to about 1600°C in an inert atmosphere and holding at the temperature for a period of time ranging from about 1 hour to about 3 hours.

17. (New) The activated carbon foam of claim 13, wherein the process further comprises the step of graphitizing said carbon foam by heating said carbon foam to a temperature ranging from about 1700°C to about 3000°C in an inert atmosphere and holding at the temperature for a period of time less than about 1 hour.

18. (New) An activated carbon foam comprising an open-celled carbon foam having a density up to about 0.8 g/cc, a surface area up to about 25 m²/g, wherein a surface of the open-celled carbon foam is sealed.

19. (New) The activated carbon foam of claim 18, wherein the carbon foam has a density between about 0.1 g/cc and about 0.8 g/cc.

20. (New) The activated carbon foam of claim 18, wherein the carbon foam has a surface area between about 10 m²/g and about 25 m²/g.

21. (New) The activated carbon foam of claim 18, wherein the carbon foam has a surface area between about 15 m²/g and about 20 m²/g.

22. (New) The activated carbon foam of claim 18, wherein the carbon foam is impregnated with a polymer.

23. (New) The activated carbon foam of claim 18, wherein the carbon foam is impregnated with an epoxy resin.

24. (New) The activated carbon foam of claim 18, wherein the carbon foam is impregnated with a petroleum pitch.